

# MICHIGAN POTATOES

The logo features the word "MICHIGAN" in a clean, white, sans-serif font above the word "POTATOES" in a larger, white, rounded, script-like font. To the right of "POTATOES" are three stylized green leaves of varying sizes, arranged to suggest growth and freshness.The background of the entire page is a vibrant photograph of a potato field. The rows of green potato plants stretch into the distance under a bright blue sky with scattered white clouds. In the foreground, the soil is cracked and dry. A semi-transparent blue map of Michigan is overlaid on the field, with the potato plants appearing to grow within the state's outline.

## THE ECONOMIC CONTRIBUTION of the Michigan Potato Sector

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**Product Center**  
Food • Ag • Bio  
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# ABOUT MICHIGAN POTATOES

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The Michigan Potato Industry Commission was formed in 1970 by the Michigan legislature as the state's potato research, promotion, and education organization.

The Commission members, as appointed by the Governor, represent Michigan's potato growers and are charged to promote an economically viable potato industry in Michigan.

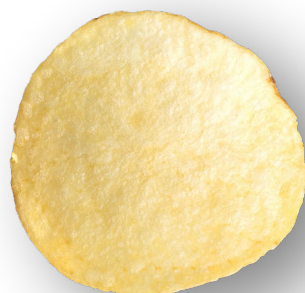
MICHIGAN  
POTATOES





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# EXECUTIVE SUMMARY

This analysis assesses the economic contribution of the potato sector in the state of Michigan. It also analyzes the supply chain for potatoes in the state.



**The total economic contribution of the potato sector to the state of Michigan is estimated to be \$2.53 billion**, of which almost \$1.50 billion is direct economic activity resulting from growing, processing, wholesaling, and retailing potatoes and potato products. The remaining \$1.03 billion is made up of indirect activity from related industries and household consumption resulting from activity generated by the potato sector.

21,700 JOBS



Total employment generated by the potato sector is estimated to be approximately **21,700 Michigan jobs**, of which approximately 15,600 are directly employed along the potato supply chain and close to 6,000 more are employed in related industries or other businesses. These jobs generate about **\$832 million in wages and salaries**, and contribute **\$2.53 billion to the annual gross state product**.

IN 2022  
8TH POTATO PRODUCTION  
6TH IN SALES



Potatoes are Michigan's second leading produce commodity. **In 2022, Michigan ranked 8th in the nation in potato production, and 6th in terms of sales** (USDA, NASS). In 2022, Michigan potato growers produced 1.888 billion pounds of potatoes with farm sales of \$246.18 million (USDA, NASS). Michigan potatoes generally sell at premium because the state is a major producer of seed potatoes and chipping potatoes.

LEADING SUPPLIER OF POTATOES  
USED FOR POTATO CHIPS



**Michigan is the leading national supplier of potatoes used for potato chips.** Some of the largest potato chip manufacturers in the country use Michigan potatoes as well as smaller regional and specialty potato chip processors. Chips use a wide range of inputs besides potatoes; some examples of these inputs include oil, salt, packaging, and transportation services. All of these activities are captured in the economic impact estimates.

In terms of employment and economic impact, potatoes are a vital vegetable for its prosperity. Nationally, **Michigan plays an important role in potato production and is critically important in the chip industry.**

MICHIGAN'S 2022 TOTAL ECONOMIC CONTRIBUTION OF THE POTATO SECTOR IS ESTIMATED TO BE

**\$2,530,000,000+**



MICHIGAN'S POTATO SECTOR IS RESPONSIBLE FOR GENERATING AN ESTIMATED

**21,700+ JOBS**

WHICH PROVIDE

**\$832 MILLION**  
IN WAGES AND SALARIES

AND CONTRIBUTES

**\$2.53 BILLION**  
TO THE ANNUAL GROSS STATE PRODUCT



# INTRODUCTION

**Potatoes are popular with consumers and according to the U.S. Department of Agriculture (USDA) potatoes are the only vegetable whose level of consumption matches USDA guidelines for a healthy diet (Guthrie et al., 2013).**

Potatoes are a remarkably versatile vegetable and have desirable characteristics that make it a staple food. It is rich in antioxidants, potassium, and potato skins are high in fiber (UC Davis 2022). It is also an inexpensive source of calories, which is very important in developing countries where food insecurity is an issue.

Michigan is the largest producer of potatoes for the chip industry in the nation (Michigan Potato Industry Commission 2022). Table 1 shows that while Michigan ranked 8th in the nation in potato production in 2022, it ranked 6th in terms of sales (USDA-NASS, 2022b). In 2022, Michigan potato growers produced 1.888 billion pounds of potatoes with a farm value of \$246.18 million (USDA:NASS, 2023). The farm price of potatoes in Michigan in 2022 was \$13.90 a hundredweight (cwt.), compared to \$12.90 a cwt. nationally (USDA:NASS, 2023). Michigan potatoes generally sell at a premium because the state is also a major producer of seed potatoes. Michigan's potatoes for chips also command higher prices, as such potatoes must meet high quality standards. Michigan producers also provide a variety of potatoes for a wide range of uses, from fresh whole potatoes to those used in food processing.

Potatoes are the most consumed vegetable in the United States (Kantor & Blazejczyk. In addition to being consumed whole, they can be processed into a wide variety of products. Over one-third of U.S. grown potatoes are processed as frozen potatoes (USDA: NASS 2022a) and about 93 percent of those are utilized as fries (USDA: NASS 2022a; Lucier, 2020). Fresh potatoes account for 25 percent of potato utilization and potatoes for chips represent about 23 percent of U.S. potato utilization (Potatoes USA, 2021). Potatoes are also a common ingredient in soups and salads. Industry statistics often separate potato utilization into three categories: at-home consumption, foodservice, and institutional utilization, where the latter entails consumption at public institutions like schools and prisons.

Foodservice utilization makes up the largest share of U.S. grown potatoes, and fries make up the largest portion of foodservice uses. One additional category is animal feed, which is usually made up of fresh potatoes with blemishes or size characteristics that make them less desirable for human food markets.



**TABLE 1: POTATO PRODUCTION OF KEY STATES – 2022**

	Potato - Sales, Measured in \$	Total Production (Cwt.)
Idaho	\$1,405,828,000	120,745,000
Washington	\$883,176,000	95,410,000
Wisconsin	\$394,471,000	26,600,000
Colorado	\$337,982,000	21,425,000
North Dakota	\$263,558,000	21,750,000
Michigan	\$246,183,000	18,883,000
Oregon	\$244,738,000	25,800,000
California	\$232,699,000	8,465,000
Maine	\$232,240,000	18,425,000
Minnesota	\$225,166,000	19,147,000
Nebraska	\$112,391,000	9,652,000
Texas	\$112,072,000	7,418,000
Florida	\$110,348,000	5,024,000

Source: USDA: NASS 2023

This analysis assesses the economic contribution of the potato sector in Michigan. It also analyzes the supply chain for potatoes and the level of cross-state shipments into and out of Michigan. The total economic contribution of the potato sector is estimated to be \$2.53 billion. Estimates suggest that \$1.50 billion of this contribution is direct economic activity resulting from growing, processing, wholesaling, and retailing potatoes and potato products while \$1.03 billion is indirect activity from related industries and household consumption resulting from activity generated along the potato sector. Total employment in Michigan generated by the potato sector is estimated to be almost 21,700, of which, approximately 15,600 are directly employed in the potato sector; more than 6,000 are employed in related industries or other businesses.

**The next section presents an overview of the U.S. domestic supply for potatoes. The supply chain represents all the processes from raw material inputs to final products for human consumption. The next section discusses the approach to measuring the economic significance of the potato industry and resulting estimates. The final section summarizes the findings and concludes the report.**



# THE MICHIGAN SUPPLY CHAIN OF POTATOES

**Table 2 shows the production of potatoes in Michigan from 2009 to 2022. The data shows a long-term trend of growth in Michigan potato production, especially since 2014.** Seed use has increased from about 1.1 million cwt. to about 1.4 million cwt. in 2019; it then declined to about 1.1 million cwt. in 2022. Farm use has also increased from about 215,000 cwt. to about 350,000 cwt. in the late 2010s. It has since declined to 260,000 cwt. in 2022. Farm use includes potatoes used by the farmer and potatoes used as animal feed. These potatoes generally do not meet the quality standards to be sold to processors or retailers. Due to improved management practices and breeding techniques the number of potatoes lost to shrinkage and loss has been cut by more than half since 2009 (USDA, NASS).

Despite such gains in potato production, Michigan potatoes face significant pest and disease challenges that may disrupt any given year's production. Table 2 further shows that farm use makes up less than two percent of total production. Depending on the year, seven to eight percent of the potato crop is used for seed.

**TABLE 2: MICHIGAN POTATO PRODUCTION 2009–2022**

Year	Production (Cwt.)	Seed (Cwt.)	Farm Use (Cwt.)	Shrinkage and Loss (Cwt.)	Sold (Cwt.)
2009	15,660,000	1,060,000	215,000	1,265,000	13,770,000
2010	15,660,000	1,089,000	210,000	1,180,000	14,270,000
2011	15,180,000	1,168,000	260,000	1,420,000	13,500,000
2012	16,100,000	1,068,000	273,000	764,000	15,063,000
2013	15,840,000	1,035,000	310,000	430,000	15,100,000
2014	15,725,000	1,058,000	315,000	450,000	14,960,000
2015	17,550,000	1,152,000	335,000	540,000	16,675,000
2016	17,390,000	1,470,000	295,000	755,000	16,340,000
2017	18,315,000	1,344,000	379,000	623,000	17,313,000
2018	18,240,000	1,400,000	373,000	680,000	17,187,000
2019	20,370,000	1,411,000	375,000	746,000	19,249,000
2020	17,550,000	1,349,000	332,000	527,000	16,691,000
2021	19,350,000	1,113,000	283,000	878,000	18,189,000
2022	18,883,000	1,076,000	260,000	854,000	17,769,000



## FUN FACTS

Michigan is an important potato producing market, and Montcalm County is the largest potato production county in Michigan. The state is the nation's leading producer of potatoes for potato chip processing and a primary source of potatoes for other uses (Cultivate Michigan, 2016). According to the most recent agricultural Census, 761 Michigan farms produced potatoes in 2017, down from 934 in 2012. While only 107 growers indicated growing potatoes for processing, they accounted for 80 percent of the total acres under potato production (USDA: NASS, 2019). Accordingly, the larger farms, by acres, tend to produce processed potatoes.

Potatoes are Michigan's second leading produce commodity. Nearly 1.88 billion pounds of potatoes are harvested annually in Michigan, generating \$246 million in sales (USDA, NASS). White and Russet potatoes are the two dominant types of potatoes grown in Michigan. About 85 percent of potato production in Michigan are white potatoes; Russet potatoes account for about 13 percent of production and an additional one to two percent of production is comprised of red and yellow potatoes (USDA, NASS). Most of the potatoes grown in Michigan are produced under contract (Source Trace Systems 2020), as the general practice for process potato farming in the U.S. is to sign forward contracts for future delivery.

**One product category of potatoes stands out in Michigan: the state is a dominant source of potatoes for chips—about 70 percent of Michigan's potato production (by volume) is sent to potato chip processors (Turner 2023). Because chip processors prefer to purchase potatoes on contract, this is also a leading reason for grower contracts for potatoes. In addition to exporting potatoes for chips to other states for processing, Michigan hosts at least five major potato chip brands and processors, including:**

- Better Made Snack Foods
- Downey's Potato Chips
- Great Lakes Potato Chip Co.
- Uncle Ray's Potato Chips
- Wine Chips

*Michigan is the home of Kellogg's, the parent company of Pringles.*

**70%**  
**OF POTATOES  
GROWN IN  
MICHIGAN ARE  
USED TO PRODUCE  
POTATO CHIPS.**

**85%** WHITE POTATOES

**13%** RUSSET POTATOES

**1-2%** RED & YELLOW

**FIGURE 1: THE SUPPLY CHAIN FOR POTATOES**



PepsiCo and Campbell Soup Company, through their Frito-Lay and Snyder-Lance divisions, are the largest producers of chips. Though the snack food segment exhibits slow growth, there is some growth in craft or specialty chip production. There is also product innovation in the chip sector focusing on lower sodium varieties, baked chips, and chips with a lower oil content designed to improve the healthfulness of chips (Diment 2021).

Processed potato production entails vast inputs from producers in other agricultural production sectors, as well as from other manufacturing sectors – particularly for packaging and processing. Processors use inputs to produce finished products. Examples of these are packaging, utilities, salt, breadings, spices, other agri-food inputs, cooking oil, and energy. The types of inputs brought into the processed potato production process depend on the type of product processed. To be sure, potatoes are also inputs to other processed and packaged food products, where potatoes are secondary components.

Potatoes and processed potato products are then handled by wholesalers. In some cases, large firms manage their own warehouses, which means they do not need to use wholesale services but carry out some of the activities that wholesalers do internally. The potatoes and potato products are then handled by retailers, foodservice firms, and institutions such as schools and hospitals. The products are then bought or consumed by the final consumer. **A stylized depiction of the complete supply chain from farm input suppliers to consumers is shown in Figure 1.**

Potato quality is important for both the fresh and processed potato markets. Since many potatoes are marketed through contracts, grading and sizing are important activities. Some potatoes destined for the fresh market go straight to potato wholesalers, and then go to either the retail market or food service or institutional sales. Given the popularity of potatoes and their versatility, the supply chain for potatoes is more complex compared to many other agricultural commodities.



# ECONOMIC CONTRIBUTIONS

**Like all industries in the U.S., the local supply chain supporting the production of raw potatoes, processing them, and delivering them to consumers in fresh or processed form, generates economic activities that exceed the direct value of the final products sold for consumption.** This section traces the transactions involved in the production of potatoes from the agricultural inputs all the way to the distribution of final goods for consumption – whether consumption takes place inside or outside of Michigan. The corresponding economic contribution estimates recognize that directly associated transactions give rise to secondary transactions as dollars are spent and re-spent in the economy in a reciprocal fashion. That is, one’s revenues will in turn become the source for expenditures in the subsequent rounds of transactions. As these secondary transactions continue, the overall realized economic effect will tend to exceed that of the businesses and stakeholders directly interacting with the potato supply chain. Accordingly, a small contribution to the economy tends to spawn larger effects over time. This expansive effect is commonly called the economic multiplier effect.

## IV. Data and Methods

The USDA, National Agricultural Statistics Service (NASS) is the primary source of information for potato production, sales, and trade. This agency also provides breakouts of commodity sales by form (frozen, fresh, dehydrated, etc.). The USDA Agricultural Marketing Services (AMS) provides in-depth coverage of trade flows of raw and processed potatoes. The U.S. Department of Commerce provides detailed transactions data called a social accounting matrix (SAM) that allows measures of inputs into the agricultural production process of growing potatoes, as well as that of processing, wholesaling, and retailing. This data is somewhat more complex than USDA-based statistics in that the SAM traces all purchases and subsequent transactions along all supply chains and forks in channels from raw material inputs to final goods. As a social accounting construct, the SAM is a system of double entry accounting, where a receipt for one party is an expenditure of another. One’s expenditure for potatoes reduces their ability to spend on other things, and when one sells potatoes, they make subsequent expenditures from the earnings gained through the sale. Businesses take revenues from sales and pay for inputs and services. Those firms supplying inputs and services take these earnings and pay for inputs, inventory, and services. Firms also pay wages to workers and profits to shareholders, and these beneficiaries take these earnings and spend them on household expenditures, setting off subsequent rounds of transactions that cease only to the extent that purchases are made for goods and services rendered outside the local economy. The SAM framework affords a means of measuring these direct and secondary transactions across the economy, from which, it is a straightforward task to estimate all subsequent rounds of transactions as dollars cycle through the economy. As reflected in the SAM analysis, such cycles continue indefinitely, mitigated only to the extent that individuals and institutions save, rather than re-spend from earnings and the extent to which subsequent purchases go to out-of-state suppliers.



The IMPLAN economic simulation model is used to model transactions and subsequent rounds of expenditures using the U.S. domestic SAM. IMPLAN is a well-established economic simulation model developed over 60 years of economic research. It provides well over 500 distinct industry details, allowing for granular tracking of transactions. Consistent with the economic theory underlying the model, the IMPLAN simulation model is strictly backward looking; therefore, modeling the economic transactions of agricultural output starts with the value of agricultural production and traces all the inputs required to make that output. The transactions required of the suppliers are similarly traced starting with the value of sales to agricultural producers and tracing back to the purchases of inputs necessary to supply agricultural buyers. It is mostly silent about what happens to that output after it leaves the farm. Similarly, if the

analysis starts with the value of wholesale activities, the analysis will start with the value of wholesale sales of potatoes and work backward, capturing the value of agricultural production necessary to supply the wholesale sales of potatoes; however, measuring potatoes' share of value becomes increasingly challenging moving down the supply chain (Miller & Mann 2020), as potatoes are intermingled with other inputs, value added activities, and internationally traded goods and services. Because it becomes increasingly difficult to assign component contributions to final value as we move down the supply chain to retail and food service, the most precise measure of the value of potato production will be found at the farm gate. All value-added attributes beyond this point should be inferred based on the farm-gate values. We use the USDA Food Dollar Series (described below) to project value added along each step of the supply chain.

**For estimating economic contribution along the supply chain, we used the USDA, Economic Research Service's Food Dollar Series (USDA: Economic Research Service 2022). The Food Dollar Series breaks consumer expenditures on food into component parts based on the industry groups. Each industry group represents the share of value of the consumer dollar captured. The Food Dollar Series provides two key measures used in this contribution assessment. First, it provides an objective means of measuring the value of final goods created by agricultural production of potatoes. Accordingly, the Food Dollar Series suggests that 7.4¢ out of every food dollar is captured by the farm. The expected value of consumer goods purchased through retail or food service channels can be estimated by taking the ratio of farmgate sales to this farmgate value. For instance, the USDA reports that farmgate sales of potatoes in Michigan were \$246.18 million in 2022 (USDA, NASS 2023). Based on the Food Dollar Series, this suggests that the value of final goods for consumption would be \$3.33 billion. This would be an objective measure if all in-state production was processed and consumed in Michigan; however, trade amongst states and that with overseas trading partners constitutes a large component of Michigan's potato crop output. Based on volume, trade makes up about 0.34 percent of total domestic volume of potato consumption. While imports and exports can take place anywhere along the supply chain, for simplicity we assume it takes place from the farm gate and adjust farmgate sales down by 0.34 percent in the final estimates.**

In addition to providing an estimate for the value of final goods produced with potatoes, the Food Dollar Series also provides a means of breaking out value at each stage of the supply chain. Table 3 reproduces the USDA Economic Research Service Food Dollar Series industry component estimates. These objective measures should be consistent with the values used in the IMPLAN model in simulating economic contributions. The columns in Table 3 show the capture of primary factors of production – or the factor share of value created. With the total value of final domestic goods of \$2.45 billion and the industry group breakouts in Table 3, the economic contribution of the domestic potato production supply chain can be simulated and estimated.

**TABLE 3: FOOD DOLLAR SERIES – INDUSTRY GROUP VALUE ADDED BY FACTORS**

Industry Group	Total (cents)	Imports (cents)	Output taxes (cents)	Property income (cents)	Salary & benefits (cents)
<b>All industries</b>	<b>100</b>	<b>5.1</b>	<b>5.1</b>	<b>39.4</b>	<b>50.3</b>
Agribusiness	2.2	0.6	0.1	1	0.6
Farm production	7.4	1	-0.4	5.2	1.7
Food processing	15.2	1.2	0.6	5.8	7.7
Packaging	2.9	1	0	0.8	1.2
Transportation	3.6	0	0	1.4	2.2
Wholesale trade	10.7	-0.3	1.7	4.2	5.1
Retail trade	12.7	0.3	1.9	3.9	6.7
Food services	33.6	0.6	0.7	12.2	20.1
Energy	3.2	0.4	0.3	1.6	1
Finance & insurance	3.6	0.1	0.1	1.4	1.9
Advertising	3.0	0.2	0	1.5	1.3
Legal & accounting	1.8	0.1	0.1	0.7	1.1

Note: Values may not add to totals due to rounding. Source: USDA, Economic Research Service, Food Dollar Series, 2022.

Each industry group can be modeled in isolation, netting out the simulation of other industry groups. Recall that the simulation model is backward-looking, such that all inputs are accounted for in the simulation up to the industry group being modeled. Hence, when modeling wholesale activities, for example, food processing, farm production and agribusiness activities are automatically built into the simulation. Not netting out these upstream activities will result in double counting those activities. Hence, direct expenditures of upstream activities are netted out in estimates for each leg along the supply chain.

Finally, IMPLAN provides multiple measures of economic effect. First, as established in the economic modeling literature, simulations are undertaken tracking the dollar value of transactions – also called output; however, other measures of economic activity can be reported. More common measures of economic activity include employment, labor income and value added<sup>1</sup>. Each are estimated for each of the 500-plus industries and simulated based on a fixed relation to the level of output. Hence, there are four measures of economic activity, output, employment, labor income and value added, and each measure moves in proportion to the level of output by segment.

Three metrics make up economic contribution estimates, regardless of which measure is used to gauge the value of economic activity. The first is the direct effects, which from an output perspective, is the dollar value of transactions directly observed by the industry group being tracked. Secondary effects are the combined economic activities generated from secondary business-to-business transactions and those transactions made by recipients of the direct expenditures. As businesses spend from initial sale receipts and households spend from earnings garnered by expenditures along the supply chain, they set into motion secondary transactions not made by the supply chain participants but rather in response to supply chain expenditures. In addition, households spend from the additional earnings generated, and a share of those earnings will remain in state, further expanding secondary effects. That is, economic effects can be categorized as those arising from activities along the supply chain and those effects arising because of activity along the supply chain. The total economic effect is simply the sum of the direct and secondary effects and is relevant for all measures of economic activity.

<sup>1</sup> Value added is often called Gross Domestic Product (GDP) or total national income at the national level and as Gross State Product at the state level. It entails the sum of labor income, proprietor's income, and net government receipts.

# ECONOMIC CONTRIBUTION ESTIMATES

**TABLE 4: ESTIMATED ECONOMIC CONTRIBUTIONS ALONG THE MICHIGAN POTATO SUPPLY CHAIN**

AGRICULTURE	Impact Type	Employment	Labor Income	Value Added	Output
	Direct Effect	2,818	\$79 Mil.	\$118 Mil.	\$234 Mil.
	Secondary Effect	1,212	\$63 Mil.	\$101 Mil.	\$201 Mil.
	<b>Total Effect</b>	<b>4,031</b>	<b>\$143 Mil.</b>	<b>\$219 Mil.</b>	<b>\$435 Mil.</b>

PRODUCTION & WHOLESALE	Impact Type	Employment	Labor Income	Value Added	Output
	Direct Effect	2,178	\$156 Mil.	\$234 Mil.	\$567 Mil.
	Secondary Effect	2,153	\$152 Mil.	\$248 Mil.	\$469 Mil.
	<b>Total Effect</b>	<b>4,331</b>	<b>\$308 Mil.</b>	<b>\$482 Mil.</b>	<b>\$1,035 Mil.</b>

RETAIL	Impact Type	Employment	Labor Income	Value Added	Output
	Direct Effect	2,314	\$80 Mil.	\$110 Mil.	\$178 Mil.
	Secondary Effect	505	\$16 Mil.	\$32 Mil.	\$28 Mil.
	<b>Total Effect</b>	<b>2,809</b>	<b>\$96 Mil.</b>	<b>\$142 Mil.</b>	<b>\$206 Mil.</b>

FOODSERVICE	Impact Type	Employment	Labor Income	Value Added	Output
	Direct Effect	8,277	\$195 Mil.	\$270 Mil.	\$524 Mil.
	Secondary Effect	2,210	\$119 Mil.	\$198 Mil.	\$333 Mil.
	<b>Total Effect</b>	<b>10,487</b>	<b>\$314 Mil.</b>	<b>\$478 Mil.</b>	<b>\$857 Mil.</b>

TOTAL	Impact Type	Employment	Labor Income	Value Added	Output
	Direct Effect	15,588	\$510 Mil.	\$733 Mil.	\$1,503 Mil.
	Secondary Effect	6,080	\$349 Mil.	\$580 Mil.	\$1,030 Mil.
	<b>Total Effect</b>	<b>21,668</b>	<b>\$859 Mil.</b>	<b>\$1,312 Mil.</b>	<b>\$2,533 Mil.</b>

## FUN FACTS

**21,700**  
**JOBS CAN BE**  
**DIRECTLY OR**  
**INDIRECTLY LINKED**  
**TO MICHIGAN**  
**SUPPLY CHAIN FOR**  
**POTATOES AND**  
**POTATO PRODUCTS.**

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**4,000** AG PRODUCTION

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**4,300** FOOD PROCESSING

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**13,300** RETAIL & FOOD

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Estimating the economic contribution of the Michigan potato supply chain starts with sequentially simulating industry group transactions, netting out the direct transactions of the previous industry group. The first industry group modeled was farm production and agribusiness, of which, the prior value is established by USDA statistics. The second can be estimated as 2.2 percent (See Table 3) of the value of final potato goods. Subsequently, wholesale and production activities are simulated and added to the economic contribution estimates of agricultural production; however, to control for double counting, direct expenditures of agricultural production and agribusiness are subtracted from food processing. All trade activity including wholesale retail trade, transportation and foodservice sales netted out the direct effects of agricultural production and food processing. As many upstream segments export out of state, the estimates assume any and all segment exports cease to circulate past the exporting leg. This leaves room for some potato products to enter the Michigan supply chain but not to contribute to the final economic contribution estimate of Michigan-grown potatoes. Export shares were determined by regional purchase coefficients calculated upon calibrating the IMPLAN model for Michigan. The resulting estimates are shown in Table 4, where the total is the sum of the estimated contributions by leg.

Accordingly, the estimates suggest that about 15,600 Michigan jobs can be directly linked to the Michigan supply chain for potatoes and potato products. Once accounting for secondary effects, the estimates show that about 21,700 jobs are supported directly or indirectly by the Michigan potato products supply chain. Relative to the size of the labor force, this suggests that about 0.5 percent of Michigan jobs can be attributed directly or indirectly to the state's potato production and marketing. About 4,000 of those jobs can be tied directly or indirectly to agricultural production and agribusiness services. Food processing and wholesaling supports approximately 4,300 jobs, while just under 13,300 direct and secondary retail and food services jobs can be linked to the domestic potato supply chain.

**The approximately 21,700 jobs are estimated to generate around \$859 million in labor earnings. These earnings are driven by around \$2.53 billion in direct and secondary transactions, while \$1.50 billion in spending can be directly linked back to the potato supply chain.**



# CONSTRAINTS

The estimation framework employed in this section reflects an economic contribution, not an economic impact assessment. Economic impact estimates follow the same approach as economic contribution assessments. However, economic impact estimates must consider all lost economic activities supplanted by the industry in question, while economic contributions only account for the economic value of activities directly and indirectly attributed to the industry in question. For example, an economic contribution assessment of agricultural production of potatoes will measure the selling value of potatoes produced and the value of all the inputs required to make that output. An economic impact assessment of agricultural production of potatoes will also measure the economic value of the sold potatoes and the associated input values. However, it will go farther to recognize the lost revenues of the likely alternative crops that would be grown in the absence of potatoes. For instance, the acres allocated to potatoes may supplant the sale and production values of corn on those same acres. Unfortunately, determining what production potatoes supplants can be challenging as this counterfactual state of production does not exist and cannot be observed directly. An economic contribution assessment does not require conjecturing the nature of agricultural production in the absence of potato production. In total, economic impact assessments impose significant barriers to estimation over that of economic contribution assessments and economic contribution assessments tend to generate estimates larger than what an economic impact assessment would create.

**One of the shortcomings of any economic contribution estimate, like that provided here, is that other supply chains can also be claimed for some associated economic activities. For example, the mashed potatoes that go into a frozen meal, like shepherd's pie, are commingled with other ingredients. Accordingly, the supply chain for minced beef or lamb, carrots and other ingredients can also assert ownership to the same value attributed to potatoes as an ingredient to the processed shepherd's pie. While the estimates provided in this analysis shares out that portion of the finished good that can be attributed to potatoes, the very nature of the economic simulation model assures that if we were to measure the economic contributions of all inputs into final products entailing potatoes, the total economic contribution would entail excessive double-counting of effects across the multiple inputs.**





# SUMMARY & CONCLUSION

This report outlines the Michigan supply chain of potatoes, recognizing Michigan as one of the larger potato-producing states in the country. Potato production is expansive throughout the world, reflecting the importance of potatoes relative to other agricultural commodities.

We use baseline industry statistics to estimate the overall economic contribution, or significance, of the Michigan potato supply chain. The supply chain represents all the legs of production from raw materials, like seed, fertilizer, and soil, to finished goods for consumption. Finished goods can be fresh and processed potatoes for home preparation, as well as prepared meals containing potatoes for consumption at home. It also includes salty snacks made from potatoes, like potato chips and shoestring potatoes. Finished goods additionally entails processed and fresh potatoes used in food services and the food service jobs supported by on-premise sales and preparation of meals entailing potatoes. The estimates also entail all handling of potatoes and potato-related products from raw material to final purchase for consumption.

**21,700 MICHIGAN JOBS CAN BE DIRECTLY OR INDIRECTLY ATTRIBUTED TO THE MICHIGAN SUPPLY CHAIN OF POTATOES.**

**THESE JOBS COMMAND ABOUT \$859 MILLION IN WAGES AND SALARIES PER YEAR AND CONTRIBUTE \$2.53 BILLION TO ANNUAL GROSS STATE PRODUCT**

**ABOUT 0.5 PERCENT OF THE MICHIGAN WORKFORCE IS SUPPORTED BY THE MICHIGAN POTATO INDUSTRY SUPPLY CHAIN.**



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POTATO CAPITAL  
OF THE U.S.**

**HELPS DELIVER \$2.53  
BILLION TO MICHIGAN**





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